

DISTRIBUTION STANDARD SYSTEM (DSS)
EQUIPMENT CONTROL SYSTEM (ECS)
SYSTEM/SUBSYSTEM SPECIFICATION (SSS)
(DI-IPSC-81431)

Revision 7/Change 12



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DISTRIBUTION STANDARD SYSTEM

Equipment Control System

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1.0 SCOPE**1.1 Identification**

This document establishes the System Subsystem Specifications (SSS) for the creation of the Equipment Control System (ECS) for installation at the following locations:

- Defense Distribution Depot San Diego, CA (DDDC)
- Defense Distribution Depot Norfolk, VA (DDNV)
- Defense Distribution Depot Jacksonville, FL (DDJF)
- Defense Distribution Depot Puget Sound, WA (DDPW)
- Defense Distribution Depot Hill, UT (DDHU)
- Defense Distribution Depot at Mechanicsburg, PA (DDSP-W IMC),
- Defense Distribution Depot at Richmond, VA (DDRV),
- Defense Distribution Depot at New Cumberland, PA (DDSP-E EDC),
- Defense Distribution Depot Pearl Harbor, HI (DDPH)
- Defense Distribution Depot Guam, (DDPH)
- Defense Distribution Depot Yokosuka, Japan (DDYJ)
- Defense Distribution Depot Oklahoma City, OK (DDOO)
- Defense Distribution Depot at Tracy, CA (DDJC-Tracy)
- Defense Distribution Depot at Red River, TX (DDRT)
- Defense Distribution Mapping Activity at Richmond, VA (DDMA)
- Defense Distribution Depot Europe at Gernersheim, Germany (DDDE)

The requirements/concept address all software resident on PC or workstation-sized computers which will drive the following and offer a communications interface with DSS (Upper Tier) functions for the following:

- NISTARS Laser Scanner Controller (NLSC),
- NISTARS Automated Storage and Retrieval System (ASRS) Controller (NMC),
- Navy STACKMAN Unit Loader,
- Navy and DLA Automated Guided Vehicle (AGV),
- DLA Consolidated Subsistence Facility (CSF),
- Navy and DLA Carousel Controllers,
- Navy and Air Force ASRS Controllers,
- Navy, Air Force and DLA Conveyors,
- DLA Allen-Bradley PLC,
- DLA Towline,
- DLA Pallet Conveyor,
- DLA Tote Conveyor,
- DLA Sorter,
- DLA Automated Weigh and Offer Systems (AWOS),
- Air Force Dimension and Weigh Systems (DAWS),
- DLA Active Item Scanner System

- DLA TRIAX Automated Storage and Retrieval System (ASRS) Controller (TRIAX), and
- communications interface with DSS (Upper Tier) functions.

1.2 System Overview

In August 1994, the Defense Distribution Systems Center (DDSC) authorized Peat Marwick (KPMG) to study the feasibility of a single equipment control system for use at all Defense Logistics Agency (DLA) depots that utilize computer-controlled mechanization. The recommendations of this study were presented in Report 3 of the KPMG study entitled "Lower Tier Standardization Evaluation". The study team proposed a portable, low-functionality system that would receive a single, Standard Movement Message (SMM) for all movement requests. DDSC proposed ECS as an equipment control system that would meet these ideals. On August 1, 1995, DDSC authorized DDSC to commence work on the development of ECS.

The purpose of ECS is to eliminate the need for the Distribution Standard System (DSS) to be involved in the mechanics of material movement at DLA depots. ECS accepts a request to move material from DSS using an SMM and will accomplish the move with no further input from DSS.

In the original version of ECS, Phase 1, the code necessary for implementation at the DLA Depots in Jacksonville, FL (DDJF), Hill AFB, UT (DDHU), Norfolk, VA (DDNV), Puget Sound, WA (DDPW), and San Diego, CA (DDDC) was developed. In Phase 2 of ECS, the code necessary for implementation at the DLA Depots in Mechanicsburg, PA (DDSP-W), and Richmond, VA (DDRV), was developed. In Phase 3, ECS, the code for implementation at the DLA Depot in New Cumberland, PA (DDSP-E) was developed. In Phase 4, ECS, the code necessary for implementation at the DLA Depots in San Joaquin Tracy, CA (DDJC-Tracy), Warner Robins, GA (DDWG), and the code for AWOS/DAWS was developed. In Phase 5, ECS, the code necessary for implementation at the DLA Depots in OCONUS Pearl Harbor, HI (DDPH), Guam (DDPH-Guam), and Yokosuka Japan (DDYJ) was developed. The expansion of the control number and conveyance ID fields from five (5) to seven (7) positions was also completed for all sites on that same baseline, and additional code for DLA Depot in San Joaquin Tracy, CA (DDJC-Tracy) was developed. Additional code is being developed to support the conveyor replacement and the Freight Terminal at Building Y-109 and W143 at DDNV. The next group of changes includes an Active Item Package Conveyor at DDSP-E, a Tote/Package Conveyor system at DDOO and a Vertical/Horizontal Tote Conveyor at DDPW. The following changes supported the replacement of the Ministackers at DDHU and a new ECS User Interface at DDNV to support the Ministacker end of aisle operation for auto and stand alone mode. The next set of changes included the Stackman AS.RS at DDDC San Diego, and the Mission/CCP Sorters at DDJC Tracy. The next changes supported the DDMA at Richmond, VA. Additional changes support the DDDE in Germersheim, Germany. Additional changes to support AWOS changes at DDSP in New Cumberland.

1.3 Document Overview

The purpose of this document is to detail the planned requirements of ECS. Included are all requirements necessary for ECS to control the Material Handling Equipment (MHE) at the planned implementation sites listed in section 1.2. There are no security or privacy considerations associated with the use of this document.

Section 2 lists the documents referenced in this SSS. Section 3 details the required capabilities and interfaces of ECS. Section 4 discusses the qualification provisions to be used in ECS. Finally, section 5 contains miscellaneous notes including a project glossary.

2.0 **REFERENCED DOCUMENTS**

KPMG Peat Marwick L.L.P report, subject "Lower Tier Standardization Evaluation"

Military Standard Software Development and Documentation Standards, MIL-STD-498

DSDC Project Guide for Implementing CMM Level 2, DSDC 8120.001

DSS Standards & Procedures (MSS/DS-XM0)

Borland C++ Documentation

Microsoft Developer Kit

Microsoft Windows NT Server Documentation

Microsoft SNA Server Documentation

Oracle8 Database and System Administration Guide

Advanced Windows. Jeffrey Richter. ISBN - 1-55615-677-4

Inside Windows NT. Helen Cluster. ISBN - 1-55615-481-X

Mastering Windows NT Programming. B. Myers, E. Hamer. ISBN - 0-7821-1264-1

Programming Windows. Charles Petzold. ISBN - 1-55615-395-3

Windows NT: A Developers Guide. Kevin Goodman. ISBN - 1-55851-306-X

Windows NT: Unleashed. Robert Cowart. ISBN - 0-672-30685-9

DDC Environmental Test Plan

ECS Project Management Plan, latest version

DSS INFO/MAN REFERENCE GUIDE for ENVIRONMENTAL TEST, IOC and PRODUCTION

DSS SECS Psuedocoding Standard

DSS ECS Software Development Plan (SDP), DI-IPSC-81427, archived version dated November 1, 1996

Operation Concept Description (OCD), DI-IPSC-81430, latest version

Interface Requirements Specifications (IRS), DI-IPSC-81434, archived version dated December 14, 2001

Interface Design Description (IDD), DI-IPSC-81436, latest version

Database Design Description (DBDD), DI-IPSC-81437, latest version

System/Subsystem Specification (SSS), DI-IPSC-81431, latest version

System/Subsystem Design Description (SSDD), DI-IPSC-81432, latest version

Software Design Description (SDD), DI-IPSC-81435, latest version

Software Requirements Specification (SRS), DI-IPSC-81433, latest version

Software Installation Plan (SIP), DI-IPSC-81428, latest version

Software Product Specification (SPS), DI-IPSC-81441, latest version

Software User Manual (SUM), DI-IPSC-81443, latest version

ECS Site Survey - Defense Distribution Depot Hill, UT - Memorandum for the Record, dated November 20, 1995

ECS Site Survey - Defense Distribution Depot San Diego, CA - Memorandum for the Record, dated November 20, 1995

ECS Site Survey - Defense Distribution Depot Jacksonville, FL - Memorandum for the Record, dated March 6, 1996

ECS Site Survey - Defense Distribution Depot Norfolk, VA - Memorandum for the Record, dated March 7, 1996

ECS Site Survey - Defense Distribution Depot Puget Sound, WA - Memorandum for the Record, dated March 15, 1996

ECS Site Survey - Defense Distribution Depot Richmond, VA - Memorandum for the Record, dated August 14, 1996

ECS Site Survey - Defense Distribution Depot Mechanicsburg, PA - Memorandum for the Record, dated August 29, 1996

Amendment to DSS-SP5-376, SCR Amendment for ECS Interface with IMC Walk & Pick

DDSP-D Memorandum for DSDC-MDL through DDRE-T, "Cart Flow Information for Standard ECS" with attachment

ECS Site Survey - Defense Distribution Depot New Cumberland, PA - Memorandum for the Record, April 28, 1998

ECS Site Survey - Defense Distribution Depot Tracy, CA - Memorandum for the Record, dated February 23, 1999

ECS Site Survey - Defense Distribution Depot Yokosuka, Japan - Memorandum for the Record

ECS Site Survey - Defense Distribution Depot Pearl Harbor, Hawaii - Memorandum for the Record

ECS Site Survey - Defense Distribution Depot Guam - Memorandum for the Record

ECS Site Survey - Defense Distribution Depot Oklahoma City, OK - Memorandum for the Record

ECS Site Survey - Defense Distribution Depot Warner Robins, GA - Memorandum for the Record

ECS Site Survey - Defense Distribution Depot Red River, TX - Memorandum for the record

ECS Design Requirement Criteria For Triax - Defense Distribution Depot Norfolk, VA – Design Meeting Minutes 05 December 2000

Technical Specification for Upgrade of TRIAX AS/RS, Bldg. W-143, DDNV - TRIAX Project #SP3100-00-C-0027 – Defense Distribution Depot Norfolk, VA

Technical Specification for Active Item Scanner System, Building 2001, DDSP - Defense Distribution Depot Susquehanna, PA

Technical Specification for Replace Tote Conveyor System, Floors 1-4, Building W-143 DDNV - Defense Distribution Depot Norfolk, VA

Technical Specification for Freight Terminal Mechanization System, Building Y-109, DDNV - Defense Distribution Depot Norfolk, VA

Technical Specification for Building 467 Vertical Tote Conveyor Replacement Project for DDPW dated July 16, 2002.

ECS Site Survey - Defense Distribution Depot Tracy - Memorandum for the record.

3.0 REQUIREMENTS**3.1 Required States and Modes**

ECS has no defined 'states' or 'modes' of operation.

3.2 System Capability Requirements

The system shall accept Standard Movement Message (SMM) from DSS and initiate the appropriate MHE action based upon that message.

3.2.1 SECS-RC1:

The system will drive the specified computer-controlled MHE at the implementation sites (listed in section 1.2) given successful implementation of DSS at those sites.

- | | |
|----------------|--|
| SECS-RC1.1 | The system shall contain the logic required for control of the NLSC, NMC, Navy & DLA AGVs, Air Force Automated Storage and Retrieval System (ASRS), (including the 2002 HK system at DDNV), Navy ASRS, Navy STACKMAN system, and Navy and DLA carousels, tote carousels and consolidation carousels, DLA tote and pallet conveyors, Air Force tote and package conveyors, DLA towlines and the DLA package sortation devices, DLA CSF stacker, DLA TRIAX ASRS and conveyor systems currently under computer control at the implementation sites. |
| SECS-RC1.1.1 | The system shall interface with the NLSC systems in use at the DLA depots in San Diego, CA and Norfolk, VA and support the current NLSC message traffic and functionality. Development is in association with SCR# DSS-ES5-400 – Development of Core ECS. |
| SECS-RC1.1.1.1 | Additional changes were added. Development is in association with SCR# DSS-NC0-097 – DDDC 12 Lane Sorter Replacement. |
| SECS-RC1.1.2 | The system shall interface with the NMC system in use at the DLA depot in San Diego, CA and support the current NMC message traffic and functionality. Development is in association with SCR# DSS-ES5-400 – Development of Core ECS. |
| SECS-RC1.1.3 | The system shall interface with the ASRS in use at the DLA depot in Hill AFB, UT and support the current ASRS message traffic and functionality. Development is in association with SCR# DSS-ES5-400 – Development of Core ECS. |

SECS-RC1.1.4	The system shall interface with the ASRS in use at the DLA depot in Norfolk, VA and support the current ASRS message traffic and functionality. Development is in association with SCR# DSS-ES5-400 – Development of Core ECS.
SECS-RC1.1.4.1	Additional changes were added. Development is in association with SCR# DSS-NV6-531 – ECS Develop for V52 at DDNV
SECS-RC1.1.4.2	Additional changes were added. Development is in association with SCR# DSS-RE0-089 – Upgrade controls on current NV Stacker system.
SECS-RC1.1.4.3	Additional changes were added. Development is in association with SCR# DSS-NV2-003 – ECS User Interface DDNV.
SECS-RC1.1.5	The system shall interface with the AGV system in use at the DLA depots in San Diego, CA, and Mechanicsburg, PA, and support the current AGV message traffic and functionality. Development is in association with SCR# DSS-ES5-387 – Development of ECS at DDSP-W and DDRV.
SECS-RC1.1.5.1	Additional changes were added. Development is in association with SCR# DSS-SP8-725R1 – Delivery stands in Building 10 Rev 1 AGV at DDSP-W.
SECS-RC1.1.5.2	Additional changes were added. Development is in association with SCR# DSS-DC9-910 – AGV at DDDC upgrade ECS interface with replacement of AGV at DDDC.
SECS-RC1.1.6	The system shall interface with the STACKMAN system in use at the DLA depot in San Diego, CA and support the current STACKMAN message traffic and functionality. Development is in association with SCR# DSS-DC0-996 Stackman at DDDC.
SECS-RC1.1.7	The system shall interface with the carousel systems in use at the DLA depots in San Diego, CA, Norfolk, VA, Puget Sound, WA, and Jacksonville, FL and support the current carousel message traffic and functionality. Development is in association with SCR# DSS-ES5-400 – Development of Core ECS.
SECS-RC1.1.8	The system shall interface through the Hewlett Packard (HP) subsystem for carousel and conveyor movement at Mechanicsburg, PA, and support the current message traffic and functionality. The system shall interface through an Allen-Bradley PLC5 to the conveyor and sortation system at Richmond, VA, and support the current carousel message traffic and functionality. Development is in association with SCR# DSS-ES5-387 – Development of ECS at DDSP-W and DDRV.

SECS-RC1.1.9	The system shall interface through a PC based subsystem to the sortation system(s) at New Cumberland, PA. Development is in association with SCR# DSS-ES5-385 ECS unique development at DDSP-E.
SECS-RC1.1.9.1	Additional changes were added. Development is in association with SCR# DSS-NC0-900 – Upgrade of communications with Sortation system at DDSP-E.
SECS-RC1.1.10	The system shall interface through A-B PLCs at New Cumberland PA, to support current towlines and pallet and tote conveyors and empty cart manager. Development is in association with SCR# DSS-ES5-385 – ECS unique development at DDSP-E.
SECS-RC1.1.10.1	Additional changes were added. Development is in association with SCR# DSS-NC0-998 – Receiving inspection tote/towline areas to round robbin at DDSP-E.
SECS-RC1.1.10.2	Additional changes were added. Development is in association with SCR# DSS-NC0-999 – L/M capability of ECS route table at DDSP-E.
SECS-RC1.1.10.3	Additional changes were added. Development is in association with SCR# DSS-NC0-020 – Addition of 13 new Rack Aisle and Transporter stations at DDSP-E.
SECS-RC1.1.10.4	Additional changes were added. Development is in association with SCR# DSS-NC1-065 – RCM towline carts zone to zone at DDSP-E.
SECS-RC1.1.10.5	Additional changes were added. Development is in association with SCR# DSS-NC0-038 – DSS ECS towline caged carts to standard carts at DDSP-E.
SECS-RC1.1.11	The system shall interface with the Air Force Tote and Package system in use at the DLA depot on Oklahoma City, OK and support the current Tote and Package message traffic and functionality. Development is in association with SCR# DSS-OO0-132 - Conveyor at DDOO.
SECS-RC1.1.11.1	Additional changes were added. Development is in association with SCR# DSS-RE3-095.
SECS-RC1.1.12	The system shall interface the CSF at Tracy, CA to support current double deep Stacker and Conveyor systems. Development is in association with SCR# DSS-TR9-939 - CSF upgrade at DDJC.
SECS-RC1.1.13	The system shall interface with the Raymond Carousel system in use at the DLA depot in Tracy, CA, and support the current message traffic and functionality. Development is in association with SCR# DSS-TR9-940 - Carousel at DDJC.

SECS-RC1.1.14	The system shall interface with the DLA TRIAX ASRS system newly retrofitted at the DLA depot in Norfolk, VA, and support the newly defined message traffic and functionality. Development is in association with SCR# DSS-RE0-088 – Refurbish DDNV AS/RS and Pallet Conveyor system at DDNV.
SECS-RC1.1.15	The system shall interface with the DLA Active Item Scanner system newly retrofitted at the DLA depot in New Cumberland, PA, and support the newly defined message traffic and functionality. Development is in association with SCR# DSS-NC0-158 at DDSP Active Item.
SECS-RC1.1.16	The system shall interface with the DLA Conveyor system replaced at the DLA depot in Norfolk, VA, and support the newly defined message traffic and functionality. Development is in association with SCR# DSS-RE2-017 – Conveyor at DDNV - W143.
SECS-RC1.1.17	The system shall contain the logic required for control of current and future Automated Weight and Offer Systems (AWOS/DAWS) at the Mechanicsburg, New Cumberland, Norfolk, Oklahoma City, Red River, Tracy, Hill and Richmond (DDMA) depots. Development is in association with SCR# DSS-EF8-863 – Develop standard AWOS system.
SECS-RC1.1.17.1	Additional changes were added. Development is in association with SCR# DSS-DD8-791 – AWOS at DDNV.
SECS-RC1.1.17.2	Additional changes were added. Development is in association with SCR# DSS-RE9-939 – AWOS at DDOO.
SECS-RC1.1.17.3	Additional changes were added. Development is in association with SCR# DSS-SP3-106 – AWOS at DDSP.
SECS-RC1.1.18	The system shall contain the logic required for control of the Freight Terminal Mechanization System in Building Y-109 at the Norfolk depot. Development is in association with SCR# DSS-RE2-016 - DDNV Y109.
SECS-RC1.1.19	The system shall interface with the new DDPW Vertical/Horizontal Tote Conveyor system at the DLA depot on Puget Sound, Washington and support the Tote Conveyor message traffic and functionality. Development is in association with SCR# DSS-PW0-131.
SECS-RC1.1.20	Development is in association with SCR# DSS-RE2-021.
SECS-RC1.1.21	The system shall interface with the new DDJC Sorter conveyor system at the DLA depot on Tracy, California and support the sorter conveyor message traffic and functionality. Development is in association with SCR# DSS-JC3-008
SECS-RC1.1.22	The system shall interface with the new Package Conveyor System at DDDE. Development is in association with SCR# DSS-RE2-132.

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| SECS-RC1.2 | DSS transactions shall be received, analyzed, and sent to the appropriate MHE. |
| SECS-RC1.3 | The system shall generate correct material movements from DSS transactions. |
| SECS-RC1.4 | The lower tier system shall provide the necessary workload management for control of the systems listed in SECS-RC1.1. |

3.2.2 **SECS-RC2:**

The system shall have a user interface.

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|-------------|---|
| SECS-RC2.1 | The system shall support multiple operator access including sites other than the main system server. |
| SECS-RC2.2 | The User Interface will display statuses of all MHE and allow the ECS operator to modify the statuses of all MHE. |
| SECS-RC2.3 | The User Interface will allow the ECS operator to generate ad hoc material movement. |
| SECS-RC2.4 | The user interface will allow the ECS operator to view logs and errors generated by the system. |
| SECS-RC2.5 | The user interface will allow the ECS operator to start and stop transaction logging for DSS/ECS and ECS/MHE message traffic. |
| SECS-RC2.6 | The user interface will allow the ECS operator to start up and shutdown the system in an orderly, controlled manner. |
| SECS-RC2.7 | System access will be available via remote call-in by the use of modem. |
| SECS-RC2.8 | The system will provide the ability to add, update, and delete from system tables. |
| SECS-RC2.9 | The system will allow users to purge storage work scheduling arrays. |
| SECS-RC2.10 | The system will provide MHE tracking capability at specified sites. |
| SECS-RC2.11 | The system will provide screen conversations to support hardware control currently in existence in PCS. |

3.2.3 **SECS-RC3:**

The system shall be flexible, portable, and scalable in operation and implementation.

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|------------|--|
| SECS-RC3.1 | The system will be table-driven to the greatest extent possible and be built from reusable software modules. |
| SECS-RC3.2 | The system shall be able to run on a single server or distributed over members of the server's network. |
| SECS-RC3.3 | The system shall be able to run on both PC-sized platforms and workstation-sized platforms. |

3.2.4

SECS-RC4:

The system will contain features necessary to ensure reliability and error handling.

SECS-RC4.1

The system will provide logic necessary to support Uninterruptible Power Supply (UPS) technology.

SECS-RC4.2

The system will automatically begin buffering of message flow upon detection of loss of communications with either DSS or MHE.

SECS-RC4.3

The system will provide the means for message logging.

3.2.5

SECS-RC5:

The system shall support the flow and throughput rates currently used at the proposed implementation sites (section 1.2).

3.2.6

SECS-RC6: NO LONGER APPLICABLE

The system shall contain a freestanding PC module for the control of sizing and dimensioning equipment. Deleted at the start of ECS Phase 2.

3.2.7

SECS-RC7:

The Upper Tier system shall support ASRS and storage/packing carousel operations.

SECS-RC7.1

The Upper Tier system shall store all ASRS and storage/packing carousel SMMs in a database table to provide a means of scheduling the workload for ASRS and storage/packing carousels.

SECS-RC7.2

The Upper Tier system shall prioritize the workload for ASRS and storage/packing carousels.

SECS-RC7.3

The Upper Tier system shall provide a user interface to allow ASRS and storage/packing carousel operations, a means of picking and stowing materiel, completing COSIS inspections, Reworkhousing, taking inventory counts, and completing location surveys. Where applicable, the user interface will highlight the individual locations within a tray.

SECS-RC7.4

The Upper Tier system shall support the Module Load functionality at the Mechanicsburg (IMC) site.

SECS-RC7.5

The Upper Tier system shall prioritize the workload for Rack and Bin Storage at New Cumberland, PA site.

SECS-RC7.6

The Upper Tier system shall prioritize the workload for TRIAX storage at Norfolk, VA site.

- 3.2.8 **SECS-RC8:**
- The Upper Tier shall support consolidation at packing in packing carousels.
- 3.2.9 **SECS-RC9:**
- The Upper Tier shall support Walk & Pick operations.
- SECS-RC9.1 The Upper Tier shall provide Workload Sequencing.
- 3.2.10 **SECS-RC10:**
- The system shall provide empty module/tote management at the Mechanicsburg, PA, site. Functionality shall equal that provided in the current ECS.
- 3.2.11 **SECS-RC11:**
- The system shall provide management and control of items held in the Packing Carousels at the Mechanicsburg, PA site. The functionality shall equal that provided in the current ECS.
- 3.2.12 **SECS-RC12:**
- SECS-RC12.1 The Upper Tier shall support Radio Frequency (RF) functionality at specified sites. Specific requirements are documented in DDSC-EF letter dated July 27, 1995, subject RF/ECS Interface Requirements for the IMC Complex.
- SECS-RC12.2 The system shall support RF/ECS functionality at the New Cumberland, PA site.
- SECS-RC12.3 The system shall support Queue Management at the New Cumberland, PA site.
- SECS-RC12.4 The system will provide selected keypad screen conversations currently in existence in PCS.
- SECS-RC12.5 The Upper Tier shall create a SMM to move pallets at DDSP-E Dimension & Weight.
- SECS-RC12.6 The Upper Tier shall support DDSP-E High-Rise Pick Sequencing.
- 3.2.13 **SECS-RC13: NO LONGER APPLICABLE;See - SECS-RC1.1.10**
- 3.2.14 **SECS-RC14: NO LONGER APPLICABLE;See – SECS-RC1.1.17**
- 3.2.15 **SECS-RC15: NO LONGER APPLICABLE;See - SECS-RC1.1.14**

3.3 System External Interface Requirements

The system will meet the current MHE interface requirements as detailed in the Interface Design Description (DI-IPSC-81436) of ECS.

3.4 System Internal Interface Requirements

All internal interface requirements are left to the design effort and the system's component requirements.

3.5 System Internal Data Requirements

All internal data requirements are left to the design effort and the system's component requirements.

3.6 Adaptation Requirements

This system will provide the site data required to configure the system for full implementation at the sites listed in section 1.2.

3.7 Safety Requirements

The system will comply with the safety requirements currently supported by the legacy systems being replaced by ECS.

3.8 Security and Privacy Requirements

This system shall provide such access security as is necessary to preclude all but authorized personnel access to the system (e.g. password protection). Security measures, like automatic callback, shall be incorporated into the remote login feature.

3.9 System Environment Requirements

The system will require an environment favorable to the operation of computer equipment. This includes, but is not limited to, protection from moisture, wind, dust, unreasonable heat, shock, and radiation. It is the requirement of the site to provide such an environment.

3.10 Computer Resource Requirements

This section will describe the hardware/software-operating environment required for this system.

3.10.1 Computer Hardware Requirements

At a minimum, this system requires a single hardware platform that is capable of running Windows NT, has 256MB of RAM, and is equipped with an LU6.2 communications card. Other hardware requirements will vary by implementation depending on the throughput requirements of the installation. Depending on site, these may include, but are not limited to, greater RAM, workstation-level processing power, multiple CPUs, multiple hardware platforms, LAN connectivity, and communications cards. Exact specifications for the system required at each implementation site will be provided in the DSS ECS System/Subsystem Design Description.

3.10.2 Computer Hardware Resource Utilization Requirements

The system will require full use of hardware resources provided by the hardware platform.

3.10.3 Computer Software Requirements

At a minimum, the system will require the current version of the Windows NT Workstation operating system and the requisite communications drivers necessary for LU6.2 communication, and the MHE interfaces at each site. Depending on site, other software requirements may include, but are not limited to, LAN software, and the current version of the Windows NT Server operating system.

3.10.4 Computer Communications Requirements

The system shall require communications lines and converters necessary for the communications to the DSS mainframe and the various MHE requiring computer-control. The latter requirement will vary by installation/site.

3.11 System Quality Factors

The system shall perform as specified in the requirements of sections 3.2 and 3.3. There are no additional system requirements relating to system quality.

3.12 Design and Construction Constraints

The following design and construction constraints will be followed:

- The system will be based upon the Windows NT operating environment.
- The system will be designed and coded using Object-Oriented design techniques.
- The system will be coded in the C++ computer language.
- The system shall be designed to minimize site-dependence and machine-dependence.

3.13 Personnel-Related Requirements

There are no personnel-related requirements.

3.14 Training-Related Requirements

The system shall be provided with documentation and a user manual. In addition, the implementation personnel shall provide user training to the staff at each implemented site.

3.15 Logistics-Related Requirements

The system shall control each site's MHE in a manner that produces no loss in functionality or efficiency as compared to current scenarios. There are no additional requirements.

3.16 Other Requirements

The system shall provide full documentation and a user manual.

3.17 Packaging Requirements

No requirements applicable.

3.18 Precedence and Criticality of Requirements

The highest importance is placed on the requirements that emphasize control of MHE, as it currently exists, without loss of functionality or efficiency. Second to that are requirements that emphasize portability and scalability of the system. All other requirements have equal weight.

4.0 QUALIFICATION PROVISIONS

Qualification as used in this document refers to the verification or validation of item performance in a specific application. This qualification results from the following:

- a. Inspection of requirements, design documents at reviews (i.e., SRR, CDR) and configuration audits.
- b. Demonstration of Unit Test and System Test.

5.0

ACRONYMS

The following is a glossary of important terms and abbreviations:

ABP	Allen-Bradley PLC's at Richmond
AFLSC	Air Force Laser Scanner Controller
AGV	Automated Guided Vehicle Subcontroller Software
AWOS	Automated Weigh and Offer System
CAR	Navy Carousel Controller
CAR01	Carousel Subcontroller Software
CSF	Consolidated Subsistence Facility
DAWS	Air Force Dimension and Weigh Systems
DDSC	Defense Distribution Systems Center
DLA	Defense Logistics Agency
DSDC	DLA Systems Design Center
DSS	Distribution Standard System
ECS	Equipment Control System
ECM01	Empty Cart Manager Subcontroller Software (New Cumberland)
GUI	Graphical User Interface
HKS	HK Systems
HPM	Hewlett-Packard Mini Computer (Mechanicsburg)
HPM01/02	Hewlett-Packard Subcontroller Software
KEY01/02	Keypad Subcontroller Software (New Cumberland)
LT	DSS-ECS Lower Tier
MHE	Material Handling Equipment
MSS	Mechanized Specification System
NMC	NISTARS Ministacker Controller
NMC01	NISTARS Ministacker Subcontroller Software
NLSC	NISTARS Laser Scanner Controller
NT	New Technology (Microsoft Windows)
NVT01	Norfolk Virginia Tote Conveyor Subcontroller Software
OO	Object-Oriented
PAL01	Pallet Subcontroller Software (New Cumberland)
PCS	Package Conveyor System (DDDE)
PLC	Programmable Logic Controller
PS (TOTE)	Puget Sound Tote Conveyor System
PTR	Production Trouble Report
SIP	Software Installation Plan
SMM	Standard Movement Message
SMN01	STACKMAN Subcontroller Software
SRT01	Sorter Subcontroller Software (New Cumberland)
STACKMAN	Pallet Storage Retrieval System at San Diego
SPS	Software Product Specification
STK01	Stacker (Hill) Subcontroller Software
SUM	Software User Manual
TOT01	Tote Subcontroller Software (New Cumberland)
TOW01/02	Towline Subcontroller Software (New Cumberland)

UPS	Uninterruptible Power Supply
UI	User Interface
UT	DSS-ECS Upper Tier

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Revision 1/Change 0.....09/09/96

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	1/Change 0	Changed Revision1\Change 0 and the date. Changed SECS to ECS
i-ii	1/Change 0	Page numbers changed to reflect the changes in the text.
Throughout	1/Change 0	Changed SECS to ECS and changed Standardized Equipment Control System to Equipment Control System throughout.
1-1 - 1-2	1/Change 0	Added an SCR number, changed the system overview to include Richmond and Mechanicsburg.
2-1	1/Change 0	Included Site Survey documents for Richmond and Mechanicsburg.
3-1 -3-2	1/Change 0	Changed SECS-RC1.1.5 to include Mechanicsburg; changed SECS-RC1.1.7 to include Puget Sound and Cherry Point; added SECS-RC1.1.8; added SECS-RC2.10.
3-3	1/Change 0	Deleted SECS-RC6. SECS-RC7 was changed to include packing and Reworking operations.
3-3 - 3-4	1/Change 0	SECS-RC9, SECS-RC10, SECS-RC11, and SECS-RC12 were added.
3-5	1/Change 0	Changed paragraph 3.10.1, platform changed from 24MB to 64MB, and specifications will be located in the System/Subsystem Design Description, not a hardware handbook.
Section 5	1/Change 0	Added current Requirements Traceability Matrix instead of a sample.

Note: The above changes have been applied as a result of SCR DSS-ES5386 and the start of ECS Phase 2

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Revision 1/Change 1.....11/01/96

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	1/Change 1	Changed Revision1\Change 1 and the date. Changed SECS to ECS.
i-ii	1/Change 1	Page numbers changed to reflect the changes in the text.
Throughout	1/Change 1	Changed SECS to ECS and changed Standardized Equipment Control System to Equipment Control System throughout.
1-1 - 1-2	1/Change 1	Added an SCR number, replaced second paragraph in Section 1.1, and changed Section 1.2 to include Richmond and Mechanicsburg and added the Amendment to DSS-SP5-376.
2-1	1/Change 1	Included Site Survey documents for all sites.
3-1 -3-2	1/Change 1	Changed SECS-RC1.1.5 to include Mechanicsburg; changed SECS-RC1.1.7 to include Puget Sound and Cherry Point; added SECS-RC1.1.8; added SECS-RC2.10.
3-3	1/Change 1	Deleted SECS-RC6. SECS-RC7 was changed to include packing & Rewarehousing operations. Added SECS-RC7.4.
3-3 - 3-4	1/Change 1	SECS-RC9, SECS-RC9.1, SECS-RC10, SECS-RC11, and SECS-RC12 were added.
3-5	1/Change 1	Changed paragraph 3.10.1, platform changed from 24MB to 64MB, and specifications will be located in the System/Subsystem Design Description, not a hardware handbook.
Section 5	1/Change 1	Added current Requirements Traceability Matrix instead of a sample.
5-10	1/Change 1	Added Purge Scheduling and MHE Tracking to system requirement names.
5-14 - 17	1/Change 1	Added PC-WS Platforms to system requirement name on each page.

PAGE NO.	REV. NO.	REASON FOR CHANGE
5-22	1/Change 1	Added H5.PN to CSCI.
5-26	1/Change 1	Added CSCIs for requirements SECS-RC8 and SECS-RC9. Added SECS-RC12 requirement and CSCIs and CSUs.
5-30	1/Change 1	Added CSCIs for requirement SECS-RC10.
6-1	1/Change 1	Added COSIS, IMC, RAM, and SRR to the glossary.

Note: The above changes have been applied as a result of SCR DSS-ES5387, the start of ECG Phase 2, and DDSC-ES Memorandum dated 10/01/96

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Revision 2/Change 0.....11/07/97

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	Revision 2	Changed Revision2\Change 0 and the date.
i-ii	2/Change 0	TOC reflects changes and realignments throughout document.
Throughout	2/Change 0	Re formatted to Word 97.
1-1	2/Change 0	Added DSS-ES5385 to section 1.1. Also, added DLA Tote and Pallet Conveyors and DLA Towline and Sorters to paragraph 1.1.
1-2	2/Change 0	Changed Version 1to Phase 1, this version to Phase 2, deleted ECS Version 2 and added note in paragraph 3 of 1.2 Phase 3, ECS, the code for implementation at the DLA depot in New Cumberland, will be developed.
2-1	2/Change 0	Added DDSP-D Memorandum dated 6/17/97 to Referenced Documents.
3-1	2/Change 0	Added DLA towlines to paragraph 3.2.1, SECS-RC1.1.
3-2	2/Change 0	Added SECS RC1.1.9 and SECS-RC1.1.10 to paragraph 3.2.1.
3-3	2/Change 0	Added SECS-RC7.5 to paragraph 3.2.6.
3-4	2/Change 0	Added to paragraph 3.2.11, SECS-RC12. SECS-RC12.2 and 12.3 Added to paragraph 3.2.12, SECS-RC13.

PAGE NO.	REV. NO.	REASON FOR CHANGE
5-2	2/Change 0	From Table 5-1 - Requirements Traceability Matrix - Traffic Controller, deleted the following Requirements: T42.PN, T43.PN, T44.PN, T52.PN, T53.PN, T54.PN, T62.PN, T63.PN, T64.PN, T72.PN, T73.PN, T74.PN, C2.PN, S2.PN, A1.PN, A2.PN, A3.PN, A5.PN, N2.PN. Re-aligned tables accordingly.
5-6 through 5-7	2/Change 0	Deleted Tables 5-2 and 5-3 - Requirements Traceability Matrix - Stacker Subcontroller (1 of 2) and (2 of 2).
5-9 through 5-19	2/Change 0	From Tables 5-4 through 5-12 - Requirements Traceability Matrix - Links and Tools (1 through 9) deleted the following Requirements: T51.PN, T61.PN, T62.PN, T63.PN, T41.PN, T71.PN, T72.PN, T73.PN, A1.PN, A3.PN, C1.PN, C3.PN, N1.PN, N3.PN, S1.PN, S3.PN, C2.PN, S2.PN, N2.PN, A2.PN, T42.PN, T43.PN. Re-aligned tables accordingly.
5-20 through 5-22	2/Change 0	Deleted Table 5-14 - Requirements Traceability Matrix - NMC Subcontroller.
5-23	2/Change 0	Added to the System Requirements number and name columns, SECS-RC7.5 in the matrix Table 5-15 Requirements Traceability Matrix - Upper Tier (con't.).
5-25	2/Change 0	Added to the System Requirements number and name columns, SECS-RC12.2, 12.3 and 13 in the matrix Table 5-15 Requirements Traceability Matrix (con't.).
5-26	2/Change 0	Deleted Table 5-19 Requirements Traceability Matrix - Stackman Subcontroller.
5-27	2/Change 0	Deleted Tables 5-20 and 5-21 Requirements Traceability Matrix - NLSC Subcontroller (1 of 2) and (2 of 2).

Note: Revisions listed above are the beginning of Phase III.

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 Revision 2/Change 0.....11/07/97
 Revision 3/Change 0.....05/10/99
 Revision 4/Change 0.....10/15/99

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	4/Change 0	Changed Revision 4\Change 0 and the date.
i-ii	4/Change 0	TOC reflects changes and realignments throughout document.
1-1	4/Change 0	Deleted reference to DDJC Sharpe.
2-1	4/Change 0	Deleted reference to DDJC - Sharpe site survey. Added DDPH-Pearl, DDPH-Guam, DDOK, and DDWG to Referenced Document list.
3-1	4/Change 0	Deleted reference to DDJC - Sharpe. Added reference to Air Force tote and package conveyors to SECS-RC1.1.
3-2	4/Change 0	Added SECS-RC1.1.11 referencing the Air Force tote and package system requirements.
4-1	4/Change 0	Added AWOS and AFLSC acronyms to Section 5.0.

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Revision 1/Change 1.....11/01/96

Revision 2/Change 0.....11/07/97

Revision 3/Change 0.....05/10/99

Revision 4/Change 0.....10/15/99

* Not distributed Revision 5/Change 0.....10/1/00

Revision 6/Change 0.....9/26/00

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	6/Change 0	Changed Revision 6/Change 0 and the date.
i-ii	6/Change 0	TOC reflects changes and realignments throughout document.
1-1	6/Change 0	Added CSF reference to paragraph 1-1.
5-1	6/Change 0	Added CSF and ASRS acronyms to Section 5.0

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Revision 3/Change 0.....05/10/99

Revision 4/Change 0.....10/15/99

* Not distributed Revision 5/Change 0.....10/1/00

Revision 6/Change 0.....9/26/00

Revision 7/Change 0.....01/22/01

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 0	Changed Revision 7/Change 1 and the date.
i-ii	7/Change 0	TOC reflects changes and realignments throughout document.
1-1	7/Change 0	Added TRIAX reference to paragraph 1-1.
2-2	7/Change 0	Added TRIAX documentation reference to section 2.0
3-1	7/Change 0	Added TRIAX information to SECS-RC1.1 in paragraph 3.2.1.
3-2	7/Change 0	Added SECS-RC1.1.14 to paragraph 3.2.1.
3-4	7/Change 0	Added SECS-RC7.6 to paragraph 3.2.7.
3-5	7/Change 0	Added paragraph 3.2.15 SECS-RC1.1.15
5-1	7/Change 0	Added TRIAX acronym to Section 5.0

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Revision 4/Change 0.....10/15/99
* Not distributed Revision 5/Change 0.....10/1/00
Revision 6/Change 0.....9/26/00
Revision 7/Change 0.....01/22/01
Revision 7/Change 1.....06/08/01

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS 6, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 1	Changed revision/change number and the date. Updated DDSC on cover page to read DDC. For changes reflected in SCR #DSS-NC0-158.
i-ii	7/Change 1	TOC reflects changes and realignments throughout document.
1-1 through 1-2	7/Change 1	Deleted Warner Robins from paragraph 1.1. Added Active Item reference to paragraph 1-1. Deleted reference to Warner Robins, and added Red River, TX in paragraph 1.2.
2-2	7/Change 1	Added Active Item Scanner System documentation reference to section 2.0.
3-2	7/Change 1	Added Active Item description information SECS-RC1.1.14 to paragraph 3.2.1. For changes reflected in SCR #DSS-NC0-158.
3-5	7/Change 1	Added references to Red River, and Hill, in paragraph 3.2.14
3-7	7/Change 1	Change 128MB to 256MB in paragraph 3.10.1
5-1	7/Change 1	Updated list of acronyms.

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 * Not distributed Revision 5/Change 0.....10/1/00
 Revision 6/Change 0.....9/26/00
 Revision 7/Change 0.....01/22/01
 Revision 7/Change 1.....06/08/01
 Revision 7/Change 2.....09/05/01

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 2	Changed revision/change number and the date. Updated DDSC on cover page to read DDC. Corrected DDC address information
i-ii	7/Change 2	Corrected layout of TOC
Entire document	7/Change 2	Corrected footer text throughout document.

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Changes in association with SCR DSS-RE2-017

Revision 0/Change 1.....10/20/95

Revision 1/Change 0.....09/09/96

Revision 1/Change 1.....11/01/96

Revision 2/Change 0.....11/07/97

Revision 3/Change 0.....05/10/99

Revision 4/Change 0.....10/15/99

* Not distributed Revision 5/Change 0.....10/1/00

Revision 6/Change 0.....9/26/00

Revision 7/Change 0.....01/22/01

Revision 7/Change 1.....06/08/01

Revision 7/Change 2.....09/05/01

Revision 7/Change 3.....03/25/02

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 3	Changed revision/change number and the date.
i-ii	7/Change 3	Updated TOC.
1-2	7/Change 3	Added reference to new code developed in association with SCR# DSS-RE2-017.
3-1 thru 3-9	7/Change 3	Edits made to All SECS-RC references.
3-2	7/Change 3	Added SECS-RC1.1.16 to section 3.2.1 in association with SCR# DSS-RE2-017.
5-1	7/Change 3	Added reference to NVT01 in association with SCR# DSS-RE2-017.

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Date of issue for revision and changed pages is:
Changes in association with SCR DSS-RE2-016

Revision 7/Change 4.....05/22/02

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT,
CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 4	Changed revision/change number and the date.
i-ii	7/Change 4	Updated TOC.
3-4	7/Change 4	Added SECS-RC1.1.18 reference to new code developed in association with SCR# DSS-RE2-016.

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Revision 7/Change 5.....07/12/02

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 5	Changed revision/Change number and the date.
i-ii	7/Change 5	Updated TOC.
1-2	7/Change 5	Updated paragraph 1.2 System Overview in association with SCR #'s DSS-NC0-158, DSS-OO0-106, and DSS-PW0-131.
2-1	7/Change 5	Updated entire section 2.0 Referenced Documents.
3-4	7/Change 5	Added SECS-RC1.1.19 reference to new code developed in association with SCR# DSS-PW0-131.
5-1	7/Change 5	Added PS (TOTE) to paragraph 5.1 Acronyms in association with SCR# DSS-PW0-131.

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Date of issue for revision and changed pages is:
Changes in association with SCR# DSS-RE2-021

*****This revision should have been 7/Change 6. The correct 7/Change 5 is listed above.
The next revision will be 7/Change 6 and will have all changes.**

Revision 7/Change 5.....10/18/02

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT,
CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 5	Changed revision/change number and the date.
i-ii	7/Change 5	Updated TOC
2-1	7/Change 5	Added DDHU technical spec reference.
3-1	7/Change 5	Added reference to 2002 HK changes at Norfolk to SECS-RC1.1.
5-1	7/Change 5	Added HKU to acronym list.

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Revision 7/Change 6.....10/28/02

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER	7/Change 6	Changed revision/Change number and the date.
i-ii	7/Change 6	Updated TOC.
1-2	7/Change 6	Added missing SCR data SCR# DSS-NC0-158, DSS-OO0-106, and DSS-PW0-131.
2-1	7/Change 6	Added missing references from section 2.0
3-4	7/Change 6	Added missing SECS-RC1.1.19 reference to new code developed in association with SCR# DSS-PW0-131.
5-1	7/Change 6	Added missing PS (TOTE) to paragraph 5.1 Acronyms in association with SCR# DSS-PW0-131.

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Revision 7/Change 7.....07/15/03

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 7	Changed revision/Change number and the date.
i-ii	7/Change 7	Updated TOC.
1-2	7/Change 7	Updated paragraph 1.2. Changes are in association with SCR# DSS-JC3-008.
2-3	7/Change 7	Updated referenced documents to include site survey in association with SCR# DSS-JC3-008.
3-2	7/Change 7	Added missing SCR data SCR# DSS-JC3-008.

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Date of issue for revision and changed pages is:

Revision 7/Change 8.....08/01/03

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 8	Changed revision/Change number and the date.
i-ii	7/Change 8	Updated TOC.
1-2	7/Change 8	Added SECS-RC1.1.21 to include changes associated with SCR# DSS-JC3-008 that were omitted in Revision 7/Change 7.

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Date of issue for revision and changed pages is:

Revision 7/Change 9.....08/29/03

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 9	Changed revision/Change number and the date.
i-ii	7/Change 9	Updated TOC.
1-1 and 1-2	7/Change 9	Added reference to DDMA at Richmond, VA in association with SCR# DSS-MA2-116.
3-4	7/Change 9	Updated SECS-RC1.1.17 to include changes associated with SCR# DSS-MA2-116.

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Date of issue for revision and changed pages is:

Revision 7/Change 10.....10/22/03

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 10	Changed revision/Change number and the date.
i-ii	7/Change 10	Updated TOC.
1-1 and 1-2	7/Change 10	Added reference to DDMA at Richmond, VA in association with SCR# DSS-RE2-132.
3-4	7/Change 10	Updated SECS-RC1.1.17 to include changes associated with SCR# DSS-RE2-132.

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Date of issue for revision and changed pages is:

Revision 7/Change 11.....04/06/04

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 11	Changed revision/Change number and the date.
i-ii	7/Change 11	Updated TOC.
3-3	7/Change 11	Added SECS-RC1.1.11.1 to include DDOO changes to Tote Package, in association with SCR# DSS-RE3-095.

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Date of issue for revision and changed pages is:

Revision 7/Change 12.....04/14/04

NOTE: TOTAL NUMBER OF PAGES IN THIS REVISION IS THE ENTIRE DOCUMENT, CONSISTING OF THE FOLLOWING CHANGES:

PAGE NO.	REV. NO.	REASON FOR CHANGE
COVER and throughout document	7/Change 12	Changed revision/Change number and the date.
i-ii	7/Change 12	Updated TOC.
1-1	7/Change 12	Added reference to AWOS changes at DDSP, changes in association with SCR# DSS-SP3-106.
3-3	7/Change 12	Added SECS-RC1.1.17.3 to include DDSP changes to AWOS, in association with SCR# DSS-SP3-106.